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Small And Medium Enterprises Sourcing Software As A Service – A Dynamic Perspective On Is Capabilities

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SMALL AND MEDIUM ENTERPRISES SOURCING SOFTWARE AS A SERVICE – A DYNAMIC PERSPECTIVE ON IS CAPABILITIES

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Abstract

Software as a Service (SaaS) is a promising approach for Small and Medium Enterprises (SMEs) firms, in particular those that are focused on growing fast and leveraging new technology, due to the potential benefits arising from its inherent scalability, reduced total cost of ownership and the ease of access to global innovations. This paper proposes a dynamic perspective on IS capabilities to understand and explain SMEs sourcing and leveraging SaaS. The model is derived from contextualizing the IS capabilities of Feeny and Willcocks (1998) to SMEs and SaaS and combining it with the dynamic capabilities framework of Teece (2007). We conclude that SMEs sourcing and leveraging SaaS require leadership, business systems thinking and informed buying for sensing and seizing SaaS opportunities and require leadership and vendor development for transforming in terms of aligning and realigning specific tangible and intangible assets.

Keywords: Software as a Service, Small and Medium Enterprises, Dynamic Capabilities, IS Capabilities

1 INTRODUCTION

Industry based research reports predict that Software as a Service (SaaS) market is anticipated to grow at the rate of 16.3% with a projected revenue of 21.3 Billion \$ by 2015 (Gartner, 2010). Small and Medium Enterprises (SME) is one of industry groups that is expected to significantly benefit from innovations originating from SaaS (Haselmann and Vossen, 2011). Traditional research on the Information Systems (IS) adoption literature by SMEs highlight the resource and capability constraints which prevent them from fully leveraging the benefits from innovations of IS (Ada, 2009, Palvia, 2008, Poon and Swatman, 1997). Although the service model of SaaS with utility pricing is anticipated to address SMEs technological IT resources and constraints, research on the specific IS capabilities required by SMEs to source and leverage the SaaS applications is very scant and lacks theoretical underpinning. This research paper aims to fill this gap with a conceptual model that proposes a set of required IS capabilities (Feeny and Willcocks, 2006) for sourcing and leveraging of SaaS through the dynamic capabilities of the firm theoretical lens (Teece and Pisano, 1994).

We make two main contributions with this research: (1) the identification of the relevant IS capabilities for SMEs sourcing SaaS and (2) a dynamic perspective addressing how these capabilities contribute to sensing and seizing of new SaaS opportunities and to transforming towards the assets alignment and realignment required by SaaS opportunities. The remainder of the paper is organized as follows, first we briefly describe SMEs and their sourcing of SaaS. Then we go into more detail about IS capabilities and their relevance for SMEs and SaaS. Thereafter, we introduce the dynamic capabilities theory and we apply it to present and discuss a dynamic perspective on IS capabilities in relation to SMEs sourcing SaaS. We end the paper with conclusions, including a descriptive model, suggest some possibilities for future research, and identify most relevant limitations.

2 SMES SOURCING OF SAAS

The definition of SMEs varies across geographies using two main factors namely number of employees or revenue. In Australia small enterprises are defined as firms with up to 19 employees and medium enterprises with 20 to 199 employees (Ergas and Orr, 2007). Similar to other OECD economies, Australian SMEs make significant contributions to economic growth by employing around 4.8 million people and 34% of private industry value added in 2008–09 (ABS, 2010). Within this large group of SMEs, the paper focuses on the business and technology savvy SMEs who are high growth orientated with international outlook within their value chain. These SMEs are also well positioned as early adopters of innovations from the information systems (IS). The traditional IS adoption literature highlights SMEs' challenges which prevent them from fully leveraging the benefits of IS, due to their inherent resource and capability limitations (Poon and Swatman, 1997, Stevens et al., 2002, Ada, 2009, Haselmann and Vossen, 2011). Due to these inherent constraints SMEs commonly source information services and skills externally. Under this context, SaaS becomes a natural option for SMEs to overcome their organizational resource constraints and lack of required technology skills.

A comprehensive definition of SaaS defines it as "SaaS model, the application, or service, is deployed from a centralized data centre across a network, providing access and use on a recurring fee basis; users normally rent the applications/services from a central provider. SaaS models vary according to the level to which the software is streamlined, to lower price and increase efficiency, or value-added through customization to further improve digitized business processes" (Hoch et al., 2001). The benefits resulting from its reduced costs, ease of access to global innovations and scalability are making SaaS as one of the best options available for SMEs to overcome their IT capability constraints namely limited IT resources and lack of required technical skills and competencies. This view is also supported by literature where total cost of ownership reduction, ease & speed of deployment,

reliability, data security, data safety & disaster recovery, risk mitigation through insulation from the continuous technology upgrades are cited as some of the key benefits of SaaS model (Waters, 2005). SaaS overcomes the deficiencies arising from the provider side customization requirements of Application Service Provider (ASP) model with its multi tenant architecture which allows for consumer side customization interfaces (Xin and Levina, 2008), which is very relevant for SMEs

While SaaS may decrease the need for some of the more technical IT capabilities, SMEs still need the IS capabilities to create and deliver business value. The process for external sourcing of IT services and associated IS capabilities are extensively analyzed within the outsourcing research in the last two decades. Outsourcing is defined as “significant contribution by external vendors in the physical and/or human resources associated with the entire or specific components of the tangible and intangible assets in the user organisation”(Loh and Venkatraman, 1992). Empirical studies and anecdotal evidences from the outsourcing literature describe the benefits, issues, methods, capabilities and processes for globally sourcing of IT services (Aubert and Weber, 2001, Lacity and Willcocks, 1995, Lacity et al., 2008, Loh and Venkatraman, 1992, Willcocks et al., 2006a). The transformation of external sourcing of IS service routines from cost efficiency reasons to strategic business objectives is also well addressed within the outsourcing literature.

This research adopts “sourcing” view of services rather than the “outsourcing” view as this view aligns more closely with SME conditions. Outsourcing is also framed as “make versus buy” decision facing the firm (Loh and Venkatraman, 1992). For most SMEs “make “ is not an option, due to resource and skill constraints within SMEs (Poon and Swatman, 1997, Stevens et al., 2002). By adopting a “sourcing” view we emphasize that for SMEs it is about “buy” decision rather than “make versus buy” decision. The sourcing view also aligns with SaaS model which provides opportunities for the exploration and exploitation of external resources and competencies that are not available within the SME firm’s assets. The next section presents the IS capabilities framework and selected subset of capabilities required for sourcing and leveraging SaaS.

3 IS CAPABILITIES FOR SMES SOURCING OF SAAS

IS capabilities are firm level capabilities that are required to leverage from information systems for operational and strategic reasons. Different representations of IS capabilities have evolved over the past decade covering both information technology aspects (IT architecture, development, implementation) and business impact of IT aspects (strategic information systems, firm performance, outsourcing) (Bharadwaj et al., 2010, Feeny and Willcocks, 1998, Ravinchandran and Lertwongsatien, 2005, Caldeira and Ward, 2003, Gengatharen and Standing, 2005).

Feeny & Willcocks (1998) identified Business and IT vision, Design of IT architecture and Delivery of IS services as three enduring challenges in exploitation of IT. Using three strands of research namely CIO profile, IT delivery and outsourcing of IS services, they identified nine capabilities (presented in Table 1) as the core IS capabilities for the exploitation of information technology (Feeny and Willcocks, 1998). This research adopted their capability framework since it covered both the IS capabilities required for external sourcing of IS services and the IS capabilities required for successful exploitation of IT. Next we will present each capability in more detail and discuss its relevance to SMEs and significance for sourcing SaaS (see also Table 1). As these nine capabilities originated from large firms’ based analysis, we used the relevance dimension to represent our interpretation of how a particular capability is relevant or not relevant for the SMEs’ context. The importance of SaaS is identified based upon the potential for that particular capability to contribute towards the business value of firm with SaaS.

IS Capabilities (Feeny and Willcocks, 1998)	Relevance To SMEs	Significance for sourcing SaaS
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Leadership	“Integrating IS/IT effort with business purpose and activity”	Strong	Strong
Business Systems Thinking	“Envisioning the business process that technology makes it possible”	Strong	Strong
Relationship Building	“Getting business constructively engaged in IS/IT issues”	Weak	Weak
Architecture Planning	“Creating coherent blue print for a technical platform that responds to current and future business needs”	Weak	Weak
Making Technology Work	“Rapidly achieving technical progress“	Strong	Weak
Informed Buying	“Managing the IS/IT sourcing strategy that meets interests of business”	Weak	Strong
Contract Facilitation	“Ensuring the success of existing contracts for IS/IT services”	Weak	Weak
Contract Monitoring	“Protecting the business contractual position, current and future”	Weak	Weak
Vendor Development	“Identifying the potential added value if IS/IT suppliers”	Weak	Strong

Table 1 IS Capabilities Evaluation for SMEs sourcing of SaaS context

IS leadership capability has a high relevance to SMEs’ context similar to large organisations due to influence and impact of SME owners’ decision making towards the adoption of IS innovations for the long term business value of the firm. A recent SME model for innovation adoption highlights importance aligning with strategy, competency augmentation and effective resource management which effectively reflects the significance of IS Leadership capability (Alsaaty, 2011) for SMEs as well as the sourcing of SaaS context.

Business systems thinking is elaborated as important capability for the team members charged with business problem solving, process reengineering and strategic development and delivering IS solutions like E-business (Feeny and Willcocks, 2006). Due to the potential impact on the various aspects of the firm, BST capability relates strongly with SMEs. The importance of BST is also evaluated as “strong” due to potential for reconfiguration of processes and resources with external sourcing of SaaS.

Feeny and Willcocks (2006) refer with relationship building to getting business division constructively engaged in IS/IT issues. Because within a SMEs responsibilities are generally less strict divided and there is more role ambiguity, we expect that this capability is applicable to a limited extent for them. Moreover, as SaaS is sourced from external service providers, the relationship capability between business and IS function within the SME firm becomes less significant. So the relationship building capability has a weak relevance to SMEs as well less importance in the SaaS context.

The implicit assumptions associated with external sourcing SaaS moves the supporting IT architecture planning and development capabilities to SaaS providers rather than consumer of SaaS services. Based on this the importance of architecture planning is indicated as weak for SaaS context. Also the size , scope and limited IS skills within in-house for planning IT architecture blue prints (Ada, 2009, Ballintine et al., 1998) establishes a weak relevance for SMEs context.

Making technology work (MTW) is essentially about the trouble shooting capability to resolve the issues associated with the technical supply chain (Feeny and Willcocks, 1998). MTW is strongly associated to the SMEs within the boundary of this research as these are early technology adopting and high growth oriented SMEs. But as the SaaS delivery model shifts the ownership for the resolution of technology oriented issues to the service providers, it is not an important capability within the context of SaaS sourcing SMEs .

Informed buying is about the management of sourcing processes, i.e. selection, purchasing and integration of SaaS applications, are aligned with firms’ strategic interests and growth goals. Within SMEs informed buying has been evaluated as “weak” relevance to indicate that SMEs inherent

technology limitations (Palvia, 2008, Ada, 2009) which results in limited knowledge about technological innovations. Also SMEs do not carry out the elaborate processes in comparison to the large organisations for purchasing of IT/IS services, informed buying was rated weak for relevance context. As SaaS market place is dynamic with the ongoing innovations, the potential for reaching out international markets for growth is high for SMEs (Mathews and Healy, 2008). Due to this potential for expansion into new markets, the importance was indicated as “strong” to represent the strategic significance of sourcing SaaS.

As SaaS service delivery is based on subscription based pricing model (Hall, 2008) and also established through simplified and standard contract procedures with the providers, the contract facilitation and monitoring capabilities are not strongly associated for both SMEs and SaaS context. Due to the limited IS knowledge within SMEs (Ballintine et al., 1998) and also their limited capacity for negotiations reduces the significance of both the contract facilitation and monitoring capabilities in SMEs compared to large organisations.

Vendor development is about identifying the potential added value of IS/SaaS service supplier. Within the SME firm, this capability enables owners to consider the long-term potential for suppliers to add value, creating the “win-win” situations in which the supplier increases its revenues by providing services that increase business benefits. It was rated as weak for relevance dimension of SMEs sourcing SaaS due to the transactional orientation of SME vendor relationships. But taking a strategic view by SME firm to identify potential added value from SaaS providers could eliminate the switching costs associated with transactional nature of the SaaS purchase in addition to the potential cost savings from the integrated services purchase. This resulted with a stronger importance factor for SaaS context due to the potential for strategic value benefits for both service consumers and providers.

Based on the above analysis we identified five capabilities, namely leadership, business systems thinking, making technology work, informed buying, vendor development are the relevant and significant IS capabilities for SMEs sourcing SaaS. We are assessing that the other four capabilities, relationship building, architecture planning, contract facilitation, and contract monitoring, are evaluated as less relevant and significant for SMEs sourcing SaaS. This is, however, a tentative assessment and further theoretical and empirical research may show a need to include these capabilities also, in particular with respect to their relevance for SMEs when they need to further develop their overall IS capability. Next the selected five capabilities will be analyzed using the dynamic capabilities theoretical lens for the identification of the dynamic characteristics and the development of an initial conceptual model for SMEs sourcing SaaS.

4 DYNAMIC CAPABILITIES THEORY

The Resource Based View (RBV) of the firm plays a critical role in terms of differentiating the contributions of information technology (asset based static view of firm’s resources) and information systems (assets and capabilities formed around the productive use of IT resources) to achieve the long term performance of a firm (Wade and Hulland, 2004). But due to problematic logical links between capabilities, resources and competitive advantage along with the static nature of RBV, it encounters the boundary conditions for the firms operating in high velocity markets (Eisenhardt and Martin, 2000).

RBV alone may be insufficient to analyze the capabilities required by SMEs to successfully source and SaaS due to dynamic nature of SaaS market place and highly volatile nature of growth focused SMEs’ operating environments. SaaS consumers oriented industry reports illustrate how the SaaS markets are highly dynamic and volatile due to ongoing service innovations (Gartner, 2011). Also SMEs that are fast growth oriented tend to demonstrate the high velocity market characteristics (Garengo et al., 2005).

The Dynamic Capabilities Theory (DCT) is envisaged to address the boundary conditions of RBV. Dynamic capabilities are defined as “the capacity of an organization to purposefully create, extend or

modify its resource base” (Helfat et al., 2007). According to Teece (2007), dynamic capabilities can, for analytical purposes, be disaggregated into “the capacity (a) to sense and shape opportunities and threats, (b) to seize opportunities, and (c) to maintain competitiveness through enhancing, combining, protecting and when necessary reconfiguring the enterprise’s tangible and intangible assets.”

While there is a significant literature in IS domain address the strategic value of IS resources using RBV theory (Bharadwaj et al., 2010, Grant, 2010, Kern and Willcocks, 2000, Peppard and Ward, 2004), research on DCT within the IS domain is still very scant. One of the notable exception is the Net Enabled Business Innovation Theory (NEBIC) theory, which states that “emerging/enabling technologies (ET) lead to economic opportunities (EO), selected opportunities can enable growth through business innovation (BI) for the purpose of creating customer value (CV)” (Wheeler, 2002). However, NEBIC is targeted to the demand side of the organisation and, therefore, less applicable to the supply side. Alagheband and Rivard (2010) introduce the concept of IT sourcing dynamic capability that they define as “the capacity of an organization to purposefully extend, create or modify its IT resource base to support the creation or modification of IT competencies for tight alignment with the firm’s business strategy” (Alagheband and Rivard, 2010). However, their approach is focussed on outsourcing arrangements; while we target the broader IS capabilities as defined by Feeny and Willcocks (1998), as discussed earlier.

Eisenhardt and Martin (2000) argue that dynamic capabilities consist of identifiable and specific routines that often have been the subject of empirical research in their own right. We, therefore, take the IS capabilities of Feeny and Willcocks (1998) as starting point and evaluate them from a dynamic perspective. Put in another way, we are specifically interested in identifying and understanding the dynamic aspects of these IS capabilities, assuming that they will most likely have both operational and dynamic aspects. Helfat and Winter (2011) recently established the reasons as to why it is impossible to draw a bright line between dynamic and operational capabilities. This main reasons are a) change is always occurring at least some extent; b) the distinguishing aspects cannot be based on if the capabilities support what is perceived to be radical versus non radical change, or new versus existing businesses; c) some capabilities can be used for both operational and dynamic purposes (Helfat and Winter, 2011). As such, this is similar to the notion of organizational ambidexterity, which stresses the need to simultaneously exploit existing competencies and exploring new opportunities (Raisch et al., 2009).

Further operationalization of the dynamic perspective is based on the sensing, seizing and transforming capabilities and their micro foundations as discussed by Teece (2007). Sensing refers to the analytical systems (and the underlying individual capacities) to learn and to sense, filter, shape and calibrate opportunities. Within the context of SMEs sourcing SaaS this means addressing the supply of SaaS applications and features for tapping into supplier innovation and addressing the demand for SaaS applications and features by identifying target market segments, changes in customer needs and customer innovation. Seizing opportunities is based on enterprise structures, procedures, designs and incentives. Within the context of SMEs sourcing SaaS this means delineating the customer solution and business model. It also requires selecting decision-making protocols and building loyalty and commitment. Transforming refers to the continuously aligning and realigning specific tangible and intangible assets. Within the context of SMEs sourcing SaaS this means developing integration and coordination skills, embracing open innovation, identifying and managing asset combinations, and leaning and creating new knowledge.

5 DCT BASED SOURCING FRAMEWORK

Applying DCT lens and drawing upon IS capabilities literature, this section proposes a dynamic perspective on IS capabilities for SMEs sourcing and leveraging with SaaS. This perspective is presented in table 3, which is derived by applying the dynamic capabilities and micro foundations of Teece (2007) as the lens for analysis of the selected IS capabilities of Feeny and Willcocks (1998).

IS capabilities	DYNAMIC PERSECTIVE		
	Sensing	Seizing	Transform
IS/IT Leadership	high	high	High
Business Systems Thinking	high	high	Low
Making Technology Work	low	low	Low
Informed Buying	high	high	Low
Vendor Development	low	low	High

Table 3 : A dynamic perspective on IS Capabilities for SMEs sourcing SaaS

5.1 IS/IT Leadership

The definition of IS/IT leadership “ Integrating IT effort with business purpose and activity” – was explained as it is central capability that devises SME firm’s arrangements structure, processes to successfully manage the interdependencies and ensure that IS/IT services delivers value for money (Feeny and Willcocks, 2006). Feeny & Willcocks (1998) outlined that leadership is essentially a CIO’s responsibility and this role is instrumental to the exploitation of IT within the firm. Within SMEs context, this leadership refers to devising of arrangements of IS services in particular external sourcing of IS services to address the business requirements for both operational and strategic purposes though the firm may not have an explicit position called CIO and all of these tasks may be addressed by the owners themselves or by an IT manager. A model for SME competitiveness with a long term performance focus, showed how SMEs can create the organizational capabilities by setting the goal and taking necessary actions using a process view of six entrepreneurial competencies namely opportunity, relationship, conceptual, organising, strategic and commitment (Man et al., 2002). Caldeira and Ward (2003) empirically established that IS/IT competences and management perspective of IT/IS adoption & use are the two deterministic factors for long term successful IS/IT deployment within SMEs (Caldeira and Ward, 2003). Based on this, the IS leadership capability will be the result of the entrepreneurial competencies to identify the opportunities from external sourcing of IS services, conceptual mapping of services towards the business value, organising the structures for service adoption and commitment for strategic utilisation of services.

From the dynamic capabilities perspective, leadership capability with these competences influence the firm’s abilities to sense (opportunity and conceptual competencies) the supply and demand side opportunities, seizing (relationships and organising) them through process and resource changes as well as transforming (strategic, commitment competencies) through design of mechanisms (relationship, strategic and commitment) for sustainable value. Teece (2007) outlines that entrepreneurial activity involves cognitive and creative skills of individuals, the more desirable approach will be to embed scanning, interpretative and creative processes inside the firm itself which is essential for SMEs firm sustainment beyond the founder’s lifetime.

In terms of sensing related activities, establishing the processes to select new service offerings and tap into supplier and complementor innovations and identification of target markets, changing customer needs and customer innovation can be established by opportunity identification and conceptual mapping between business value of IT competencies of IS leadership capability. Establishing both short term and long term oriented relationships with service suppliers to capitalize on their innovations and reorganisation of the internal resources and processes to adopt the external IS service offerings relate to seizing behaviours of IS leadership competencies within the context SMEs sourcing SaaS.

Teece (2007) declares that “enterprises with good dynamic capabilities will have the entrepreneurial management that is strategic in nature and achieves value enhancing orchestration of assets, inside, between and amongst enterprises and other institutions within the business ecosystem”. Further elaborations indicate that DCs are meta competences that link to management ability to combine and reconfigure specialized and co-specialized assets (from external sources) to meet the changing customer needs and to sustain and amplify evolutionary fitness of firms. We associate these

competences of DC directly with the strategic and commitment competences of SME IS leadership capability as strategic commitment to the reconfiguration of internal and external assets aiming towards the goal of evolutionary fitness results in long term value for the firm and its value chain. Based on this, the leadership capabilities that take the strategic view of external sourcing of IS services towards achieving evolutionary fitness of SME firm demonstrating the dynamic characteristics of transformation.

5.2 Business Systems Thinking

Business systems thinking (BST) capability is defined as “IS capabilities are envisioned in every business process ” (Feeny and Willcocks, 1998) This was expanded later with the findings that in the best practice organizations, business systems thinkers are important contributors to teams charged with business problem solving, process reengineering, strategic development within the context of e-business (Feeny and Willcocks, 2006). BST is also described as a set of behaviours namely IS involvement in business strategy formulation, IS based process changes and IS based new process creation (Van Der Heijden, 2001). Peppard and Ward (2004) suggested that the combination of IS and business knowledge is the paramount to ensure the conception of strategies involving technological innovation, to make appropriate choices from the opportunities available and to implement these strategies quickly and effectively, including managing change (Peppard and Ward, 2004). The behaviours and impacts of BST within SMEs sourcing SaaS context, directly relates to ability to sense business opportunities that can benefit from SaaS during business strategy formation and seizing those opportunities through alteration of the existing or creation of new processes.

The demonstration of sensing and seizing characteristics of the BST capability can be illustrated with Salesforce example. Salesforce, one of leading SaaS service in the industry provides firms with the features for identification of target market segments and changes in customer needs within their sales and marketing processes for growth. Sales and marketing are strategic focus areas for SMEs that are in growth phase (Lester and Tran, 2008) which is also essentially the scope of the SMEs addressed within this research. BST can enable business systems thinkers within the SMEs to sense customer oriented opportunities that may be possible with the adoption of services like Salesforce. Also based upon the features provided by particular service offering like Salesforce, SMEs can either modify or create new processes for customer relations, market responsiveness and marketing areas. BST enables the SMEs business owners/thinkers seize the opportunities with integrated decision making, selection of target customer and process changes for the business value once the opportunities are identified through the sensing process. Based on these implications of BST, we conclude the business systems thinking can contribute towards sensing of the opportunities with SaaS offerings and seizing of those opportunities with realignment of resources and processes within the firm.

Teece (2007) elaborates transforming through decentralization, governance, co-specialization and knowledge management activities to enable the continuous alignment and realignment of assets. BST's scope is limited to IS/IT oriented asset realignments only and excludes other asset alignment and realignment processes which occur outside the context of IS/IT systems. (Examples are mergers, acquisitions, reorganisation etc.). Due to this limitation, our present proposition is that BST does not fully reflect upon on dynamic perspectives of transformation.

5.3 Making Technology Work

Making Technology Work (MTW) is elaborated as the capability that demonstrates the rapid troubleshooting of the problems which are essentially being disowned by others in the technology supply chain of activities within the firm(Feeny and Willcocks, 1998). Though this capability is expressed as if it is a short term oriented technology fixing competency, the implementation of this capability is described as “to address the business needs that cannot be properly satisfied by standard technical approaches”(Willcocks et al., 2006b). When IS services are externally sourced with a SaaS model,

though MTW is a critical capability that will be required within the SME firm to resolve issues quickly, though these issues may be addressed by service provider within the established service level agreements. Since MTW shifts the technology issues resolution related effort to the providers, the SMEs have the potential to capitalize on this, by realigning their IS resources towards business needs. This may or may not be possible due to two reasons. One as shown earlier, SMEs tend to address the IS troubleshooting needs through external resources due to limited resource constraints. Also business needs may or may not be addressed by skills offered by IS troubleshooting resources.

Due to the short term and reactive nature of troubleshooting activity and the inherent technology constraints of SMEs (Palvia, 2008) associated with MTW, the probability for sensing SaaS opportunities, seizing them with process modifications and transformation through asset realignments with MTW capability is limited. Based on this we conclude that MTW contributes to neither sensing & seizing nor transforming processes.

5.4 Informed Buying

Informed Buying (IB) means “managing the IS/IT sourcing strategy that meets the interests of the business”(Feeny and Willcocks, 1998). It involves the analysis of the external IS/IT market and selecting a sourcing strategy based on business needs and technological considerations. Informed buying takes a central position in the Feeny and Willcocks’ Core IS Capabilities framework (together with leadership) addressing the business and IT vision, the design of the IT architecture and the delivery of IS services. Similarly, Peppard and Ward (2004) include IS innovation, technology analysis and sourcing strategies in their competences model(Peppard and Ward, 2004). These were confirmed in the research of Cragg, Caldeira and Ward (2011) into the organizational IS competences in SMEs (Cragg et al., 2011). Henderson and Venkatraman (1993) have also argued for an external orientation of the IT strategy towards positioning the firm in the IT marketplace to identify opportunities and make choices related to the specific information technologies that can support current business strategy or shape new business strategy(Henderson and Venkatraman, 1993).

From a dynamic capability perspective, informed buying will be most relevant in relation to sensing and seizing. Tapping into supplier innovation is an important aspect of informed buying. As Teece (2007) argues, enterprises need to constantly scan, search and explore across technologies and markets. This requires assessing how technologies will evolve and how and when suppliers will respond. Moreover, the actions of suppliers can also change the nature of the opportunity and the way in which competition will unfold. When suppliers rapidly innovate, the ability of enterprises to continuously tap into such (external) innovation ahead of the competition can determine downstream competitive success. Within this context, Teece refers to the concept of ‘open innovation,’ as introduced by Chesbrough (2003) (Chesbrough, 2003). For SaaS this can mean understanding the development of the SaaS model itself, being aware of which existing applications and features can be sourced as a service, which new, innovative applications and features are introduced via SaaS. Therefore, we conclude that informed buying can play an important role for sensing opportunities and threats related to sourcing and leveraging SaaS.

Informed buying is also relevant for seizing when it comes to selecting the business model. As Teece (2007) argues, the development of the business model requires a good deal of supplier information and intelligence, in particular in relation to understanding supplier behaviour and the behaviour of costs. The literature on business models recognizes the idea that enterprises operate in business networks and that suppliers can play an important role in these. Jean, Sinkovics and Cavusgil (2010) found evidence that international customer inter-organisations relations are positively enhanced by information technology resources applied in the setting of international business relationships. IT resources when applied to business relationship capabilities have been shown to increase international supplier relationship performances for the firm (Jean and Sinkovics, 2010). Moreover, with the growing digitization of business, the role of IT suppliers within these networks becomes more prominent. With respect to sourcing SaaS, it requires analyzing the value chain thoroughly so as to understand just how

to deliver what the customer wants in a cost-effective and timely fashion. For example, Salesforce can make it possible for an SME to easily scale up in terms of growing its number of customers and contracts and provide a growing number of salespeople with relevant customer information.

5.5 Vendor Development

Vendor Development (VD) refers to “identifying the potential added value of IS/IT service providers” (Feeny & Willcocks, 1998, pp. 15). It is in the enterprise’s interest maximize the contribution of existing suppliers, in particular when substantial switching costs are involved. While it is hard to make a generic statement about the switching costs of SaaS in general, even relatively limited switching costs and effort may easily be substantial for resource constraint SMEs. According to Feeny and Willcocks, the focus is on looking for a win-win situation with long-term potential for the supplier beyond existing contractual arrangements. This means exploring new ways in which the supplier can provide services that increase the business benefits for the enterprise and increase the revenues for the supplier. Related to this, Peppard and Ward (2004) identify supplier relationship and cost management competences as part of the supply macro competence. In addition to Peppard and Ward, Cragg, Caldeira and Ward (2011), in their study of organizational IS competences in SMEs, also identify the inter-organizational collaboration competence as part of the exploitation macro competence. Vendor development is also common in the purchasing and supply chain management literature, for example, Monczka et al. (2009) see supplier development as part of strategic sourcing and define it as “any activity undertaken by a buyer to improve a supplier’s performance or capabilities to meet the buyer’s short- and long-term supply needs”(Monczka, 2009). Vendor development may not always be achievable for SMEs sourcing SaaS as they are relatively small customers for large SaaS suppliers. However, SaaS vendors may have an interest in working with SMEs when they push the innovative application of the software as lead users or show a high growth potential. Moreover, SMEs can work with smaller SaaS suppliers that may be more focussed on their specific needs or may join forces with other SMEs to increase their buying power.

From a dynamic capability perspective, vendor development is most prominent in relation to transforming. According to Teece (2007) enterprises need to continually align and realign specific resources. These resources can be both inside and outside the firm, the latter being the case with SaaS. Teece (2007) addresses the need for autonomy and decentralisation in order to increase responsiveness but also stresses the need for integration so the customer and business can benefit. External sourcing of IT can increase the responsiveness of SMEs as it results in relatively autonomous decision making about technology (by the IT provider) and business (by the enterprise). SaaS transfers even more of the technology related activities to the provider and provides it as a commodity, resulting in greater decomposability. Moreover, complementary innovation and complementary resources are of great significance (Teece, 2007). More specifically, the external SaaS resources need to be aligned and realigned with complementary organizational resources and business processes to create business value (Melville et al., 2004). The ability to identify, develop, and utilize complementarities is an important dynamic capability (Teece, 2007). Finally, learning and the generation of new knowledge are required for continuous alignment and realignment specific resources (Teece, 2007). With SMEs sourcing SaaS from an external provider this means that this should take place across the boundaries of the organizations. Vendor development is particularly relevant for benefitting from decentralization, managing complementarities, and enabling learning and the generation of new knowledge to achieve the continuous alignment and realignment specific resources. Vendor development can make sure that business innovations and requirements of the SME are still taken into account in decision making about application development and service provision by the SaaS provider. It can be used to influence important technology choices and priorities of the SaaS provider. Vendor development also enables the transfer and know-how from the SME to the SaaS provider.

6 CONCLUSION

With the growing importance of SaaS and the new opportunities it offers, in particular for SMEs, a more fundamental and theoretical understanding of SMEs sourcing and leveraging SaaS is required. This paper addresses this concern by offering an approach based upon a dynamic perspective on IS capabilities (Figure 1). An analysis of the core IS capabilities of Feeny and Willcocks (1998), which was selected because of its explicit inclusion of sourcing capabilities, resulted in the identification of leadership, business systems thinking, making technology work, informed buying and vendor development as IS capabilities relevant for SMEs and/or important for SaaS. We then analysed how these capabilities could be perceived from a dynamic perspective based upon the sensing, seizing and transformation framework of Teece (2007). This resulted in positioning leadership as having dynamic aspects related to sensing, seizing and transforming. Business systems thinking and informed buying are conceived as dynamic with respect to sensing and seizing while vendor development is conceived as dynamic with respect to transforming. Put in another way, SMEs sourcing and leveraging SaaS require leadership, business systems thinking and informed buying for sensing and seizing SaaS opportunities and require leadership and vendor development for transforming in terms of aligning and realigning specific tangible and intangible assets.

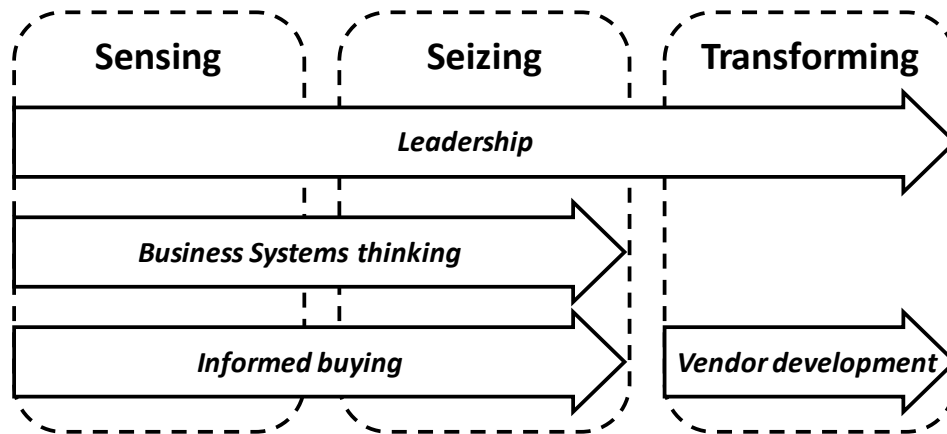


Figure 1. A dynamic perspective on IS capabilities for SMEs sourcing SaaS

The main contribution of this paper is that it provides a dynamic perspective on IS capabilities that can be used to understand and explain SMEs sourcing and leveraging SaaS. Further research into this area can, on the one hand, continue the development and underpinning of the suggested model, for example, by further embedding in the IS and SME literature. On the other hand, this framework can also be used as the basis for empirical studies into SMEs sourcing and leveraging SaaS. As this paper is one of the first of its kind, it is still very explorative and tentative. A further theoretical and empirical grounding of the identification of IS capabilities for SMEs sourcing SaaS and of the specification of a dynamic perspective on those capabilities is required. Further limitations of the paper are its reliance on the work of Feeny and Willcocks for the IS capabilities and on the work of Teece for the dynamic capabilities. Including more research into these areas, in particular in relation to SMEs, would be required before a more causal model can be developed.

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